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MEMORANDUM

CH2MHILL

TO: Michael Guillaume/EG&G, Project Officer

COPIES: Sam Bamberg/R A Consultants
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Chris Rayburn/IT Corporation
Brian Rothman/IT Corporation

FROM: Karen Wiemelt/CH2M HILL

DATE: May 6, 1991

SUBJECT: OU 3 RFI/RI Work Plan Status Meeting

PROJECT: DEN30181.P1.T1

The following notes document the April 29, 1991, OU 3 RFI/RI Work Plan status meeting and convey our interpretation of the topics discussed:

ATTENDEES

- Sam Bamberg/R A Consultants
- Beth Baruth/CH2M HILL
- Bob Birk/DOE/RFO
- Michael Guillaume/EG&G
- Tom Kuebrich/IT Corporation
- Amy Lange/CH2M HILL
- Joan Miller/CH2M HILL
- Rick Roberts/EG&G
- Brian Rothman/IT Corporation

- Dennis Smith/EG&G
- Karen Wiemelt/CH2M HILL
- Larry Woods/EG&G

TOPICS DISCUSSED

The OU 3 RFI/RI sampling program was discussed. EG&G's primary concerns were defining the OU 3 boundary and determining the contaminants of concern. We discussed classifying soil samples based on the land use area they came from. For the contaminants of concern, we decided to focus primarily on Pu and Am contamination. Approach that was agreed to is discussed in the April 29, 1991, meeting notes for the meeting with EPA and CDH.

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- Amy Lange/CH2M HILL
- Bonnie Lavelle/EPA
- Angelo Ortello/PRC
- Rick Roberts/EG&G

- Brian Rothman/IT Corporation
- Joe Schieffelin/CDH
- Dennis Smith/EG&G
- Karen Wiemelt/CH2M HILL
- Larry Woods/EG&G

TOPICS DISCUSSED

General DQOs

The process used to identify DQOs was presented as follows:

- Conceptual model was used to identify data needs
- Existing data were reviewed to focus the data needs
- Quantitative risk assessment data needs were also identified

EPA emphasized the importance of making sure some data needs are not overlooked. For example, take a pathway all the way through the risk calculation so it is known exactly what parameters are needed.

The proposed field sampling program was also presented. The program is summarized as follows:

Soils

- Western Aggregate Report sampled soils to the west of RFP and identified near-background concentrations.
- Krey-Hardy Report used only 22 samples to develop their isopleths. They took a lot of liberty in developing the isopleths.
- Seed Report used many more samples than the Krey-Hardy Report to develop isopleths; however, the exact locations and data are not available.
- CDH sampling method is the standard method. Western Aggregate used this method; Krey-Hardy and Seed did not.
- OU 3 RFI/RI approach will be to use the CDH sampling method but there are limitations: CDH method collects the top 1/4 inch and if an area has had any activity, even grazing, the top 1/4 inch has been disturbed. Therefore, when a

disturbed area is sampled, the results may be markedly different from undisturbed area results.

- OU 3 RFI/RI approach will use a grid system and the CDH sampling approach. Land use areas will be identified and recorded, i.e., undisturbed, agricultural, developed, etc. Data from the same land use areas will probably be evaluated together and will not be evaluated with data from other land use areas.

- OU 3 RFI/RI approach also will include vertical distribution samples, probably in undisturbed areas.

- OU 3 RFI/RI approach may be subject to some modifications based on OU 2 RFI/RI results.

Contaminants of Concern

- Operating hypothesis is that Pad 903 is the significant source of contamination. The source was there long enough and in concentrations high enough to cause the contamination we see in OU 3.

- Since Pu is one of the most potent carcinogens, we are using it as the "indicator parameter."

- From Pad 903 to OU 3, a 500- to 1,000-fold reduction in Pu concentration has been seen.

- There were no other releases at RFP that were long enough or in concentrations high enough to consider other contaminants in the RFI/RI.

- EPA's concern is that the public will not understand why other contaminants are not sampled for in this OU but they are in other OUs. There is a need to look at transport from other OUs. If other contaminants are not included in the sampling program, strong technical rationale must be presented in the OU 3 RFI/RI Work Plan.

- EPA likes to base contaminants of concern on a good conceptual model that goes all the way through source/ pathway/receptor. Look at each potential pathway from other OUs and present rationale.

- A good starting point for identification of contaminants of concern is the Dose Reconstruction Report.

Sediments

- OU 3 RFI/RI approach will be to sample sediments along drainages, along the shores of the reservoirs, and within the reservoirs.

- Five to seven samples will be collected upgradient of each reservoir along the drainages (95% confidence level); three samples will be collected downgradient of each reservoir along the drainages (85% confidence level); with actual numbers to be refined as part of our statistical consideration. Samples will be composited consistent with OUs 5 and 6. Pu and Am will be analyzed on all samples, and several samples will be analyzed for a full suite of parameters.

- Sediment samples along the shoreline are important to the Baseline Risk Assessment. Samples will be collected randomly in zones around the reservoir, with the zones identified based on use. Pu and Am will be the analytical parameters.

- Three vertical profile sediment samples will be collected within each of the reservoirs along with one composite sample. The sample depth is dependent on sedimentation rates. Pu, Am, and full suite (composite samples only) will be the analytical parameters.

Surface Water

- Surface water samples will be collected in the drainages and in the reservoirs.

- In the drainages, samples will be collected at RFP boundary, reservoir inlet, and reservoir outlet. Pu and Am will be the analytical parameters.

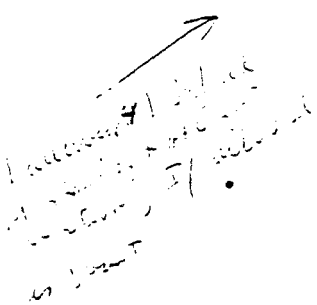
- In the reservoirs, samples will be collected near the sediment sampling locations. Stratified surface water samples will be collected based on stratification identified using DO, pH, and EC. Pu and Am will be the analytical parameters. These may be refined based on sediment sampling result, if possible.

- If this sampling (and other sampling) confirms existing data, we will look at incorporating existing data into the Baseline Risk Assessment.

Groundwater

- OU 3 RFI/RI approach will use existing groundwater monitoring wells at the eastern boundary of RFP as upgradient wells. Pu has been detected only one time in low concentrations, and no other contaminants have been detected.

- OU 3 RFI/RI approach will install 2 alluvial wells downgradient of Great Western Reservoir, 2 alluvial wells downgradient and 1 alluvial well upgradient of Standley Lake, ~~and 2 alluvial wells downgradient of Mower Reservoir~~. One additional well will be installed in the Arapahoe formation (bedrock).



- This approach does not characterize surface water/ groundwater interactions; it confirms what is seen at the RFP boundary wells.

- The assumption is that Pu is not soluble and, therefore, the groundwater is not contaminated. Some may argue colloidal Pu could contribute to groundwater contamination.

- Further consideration will be given to the necessity of the groundwater sampling.

Air

- OU 3 RFI/RI approach will be to collect air samples in low lying areas along shores of the Great Western Reservoir and Standley Lake. Samples will be collected during low, medium, and high wind events. Pu and Am will be the analytical parameters.

- Great Western Reservoir sediments have the highest concentration of contaminants, while Standley Lake has the highest chance for exposure due to its recreational use.

- Additional extensive air sampling is ongoing. We will look at the results from those events.

Biota

- OU 3 RFI/RI approach will be to perform both qualitative and quantitative field surveys. We will coordinate with OUs 2, 5, and 6 investigations.

- Qualitative surveys will include identification of species and their condition, as well as locating and mapping wetlands and snow accumulation areas. These areas are likely to accumulate contamination.

- Quantitative surveys will include sampling terrestrial above ground biomass vegetation and small mammals, and aquatic species.

- The assumption used for developing the terrestrial sampling program was that there is not much chance for root uptake since Pu is not mobile; the only pathway is defoliar deposition. Pu and Am will be the analytical parameters.

- It is difficult to demonstrate toxicity of radionuclides in aquatic phytoplankton since the turnover is so high. Therefore, benthic macroinvertebrates and fish will be sampled. The analytical parameters will be the same as the surface water analytical parameters.

Summary

- The OU 3 RFI/RI sampling program is preliminary and is likely to change slightly from what was presented. The purpose was to present initial thoughts on the OU 3 sampling.

- EPA has some concerns with the conceptual model which may require modification.

- EPA emphasized the importance for strong rationale discussions on analytical parameter selection.

- EPA is not convinced that all existing data are useless, probably can use some of it in the Baseline Risk Assessment.